

Application No. 10/828,521
Reply to Office Action of April 18, 2007

2

Docket No.: ARL 03-01

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A copolymer composition comprising a compound having the formula:



wherein A is a thermoplastic block copolymer including a monomer $\overset{(C)_n}{\underset{|}{\text{RZ}}}$; B is polyisobutylene including a monomer $-(D)_m-$; m and n are each independent integers between 10 and 10^7 ; R is an oxygen and an element selected from the group consisting of a chalcogen, nitrogen, and phosphorus; and Z is a cation; and RZ is present on over 0.7 in 70 mol

$\overset{(C)_n}{\underset{|}{\text{RZ}}}$
percent of the monomer $\in \overset{(C)_n}{\underset{|}{\text{RZ}}}$ in copolymer A to provide an ion exchange capacity of between 1.78 and 2.04 milliequivalents per gram of said compound.

2. (Original) The copolymer composition of claim 1 wherein A is polystyrene.

3-4 (Canceled)

5. (Previously presented) The copolymer composition of claim 1 wherein R is SO_3^- .

6. (Previously presented) The copolymer composition of claim 1 wherein Z is a cation compatible with R and selected from the group consisting of H, a lanthanide species, an alkaline earth metal and an alkali metal.

Application No. 10/828,521
Reply to Office Action of April 18, 2007

3

Docket No.: ARL 03-01

7. (Original) The copolymer composition of claim 6 wherein Z is Cs.

8. (Original) The copolymer composition of claim 1 further comprising a second block A bonded to block B.

9. (Original) The copolymer composition of claim 1 wherein block A is present at levels ranging between 1-99% of the total block copolymer.

10. (Original) The copolymer composition of claim 1 wherein block A is present at levels ranging between 5-90% of the total block copolymer.

11. (Original) The copolymer composition of claim 1 wherein block A is present at levels ranging between 10-70% of the total block copolymer.

12. (Currently amended) A copolymer composition comprising a compound having the formula:

$$A—B—A' \quad (II)$$

wherein A is a thermoplastic block copolymer including a monomer $\overset{(C)_n}{\underset{PRZ}{\text{—}}}$; B is polyisobutylene including a monomer $—(D)_m$; A' is a thermoplastic block copolymer including a monomer $\overset{(C)_n}{\underset{PRZ}{\text{—}}}$; m and n are each independent integers between 10 and 10^7 ; R is oxygen and an element selected from the group consisting of a chalcogen, nitrogen, and

Application No. 10/828,521
Reply to Office Action of April 18, 2007

4

Docket No.: ARL 03-01

phosphorus; and Z is a cation; P is a phenyl group, and RZ is present on over $0.7(n+q)$ of P 70

$\text{---(C)}_n\text{---}$ $\text{---(C)}_q\text{---}$
mol percent of the monomer PRZ and the monomer PRZ to provide an ion exchange
capacity of between 1.78 and 2.04 milliequivalents per gram of said compound.

13. (Cancelled)

14. (Previously presented) The copolymer composition of claim 12 wherein Z is a cation compatible with R and selected from the group consisting of H, a lanthanide species, an alkaline earth metal and an alkali metal.

15. (Original) The copolymer composition of claim 12 wherein R is SO_3 .

16. (Original) The copolymer composition of claim 12 wherein Z is selected from the group consisting of: H, Cs, Zn and Na.

17. (Original) The copolymer composition of claim 12 wherein RZ is SO_3H .

18. (Original) The copolymer composition of claim 12 wherein block A is present at levels ranging between 1-99% of the total block copolymer.

19. (Original) The copolymer composition of claim 12 wherein block A is present at levels ranging between 5-90% of the total block copolymer.

Application No. 10/828,521
Reply to Office Action of April 18, 2007

5

Docket No.: ARL 03-01

20. (Currently amended) The copolymer composition of claim 12 wherein block A is present at levels ranging between 10-70% of the total block copolymer A and A'.

21-30 (Cancelled)